

## CLAIMS

1. A Network Management System (NMS) of Virtual Private Network (VPN), comprising the provider network management system and the customer network management system, characterized in that: there is a customer network management agent functional module between the provider NMS and the customer NMS; said module is connected with the OSF functional module in the provider NMS via f-interface, so as to implement the customer network management agent.

2. The system as in claim 1, characterized in that: the customer NMS employs an architecture constituted by the following three layers: a client layer running in a browser, a centralized controller layer running on a Web server in the provider's website, and a business layer comprising the customer network management agent functional module; the client layer being connected with the centralized controller layer through a network; the centralized controller layer being connected with the business layer through the network or dedicated line.

3. The system as in claim 2, characterized in that: said client layer comprises a browser and a CNM interface running on the browser, which is oriented to a customer to provide a CNM Graphic User Interface (GUI).

4. The system as in claim 2, characterized in that: said centralized controller layer comprises request controller, message codec, and message transceiver modules, which running on the Web server of the provider's website.

5. The system as in claim 2, characterized in that: said business layer comprises a CNM agent in the provider NMS.

6. The system as in claim 2, characterized in that: said client layer accesses said network through the customer's network equipment; said centralized controller layer accesses said network through the provider's network equipment; said network is Internet or another private network.

7. A method for implementing a Network Management System (NMS) of Virtual Private Network (VPN), which comprises the provider NMS and the customer NMS, characterized in that: the customer NMS is connected with the OSF module in the provider NMS via f-interface, so as to implement customer network management agent.

5           8. The method as in claim 7, characterized in that: said method comprises the following steps:

          a. the customer submitting a CNM function request;

          b. decoding the CNM function request and encapsulating it into a NMS message;

10          c. identifying the type of the CNM function in the NMS message, determining the associated NMS functional module, and using f-interface to send the NMS message to the corresponding functional module in the NMS for processing;

          d. encapsulating the processing result returned from the corresponding functional module in the NMS into a NMS response message;

15          e. generating a display page according to the NMS response message;

          f. displaying the page.

          9. The method as in claim 8, characterized in that: in step a, the management function request is submitted in the client browser through the following steps:

          a1. judging whether the customer has logged in; if the customer has logged in,  
20   going to step a3; otherwise

          a2. entering the CNM customer information and generating a CNM function request, and going to step a4;

          a3. choosing from the CNM functions and generating a CNM function request;

          a4. sending the CNM function request.

25          10. The method as in claim 8, characterized in that: in above step b, the process in which the CNM function request is decoded and encapsulated into a NMS message comprises the following steps:

b1. decoding the received CNM function request;

b2. judging whether the data in the request is complete; if it is complete, going to step b4; otherwise

b3. generating an error page and sending it back to the client browser for display,  
5 and then terminating the process;

b4. encapsulating the request into a NMS message.